Public-Service Broadcasting Online: Assessing Compliance with Regulatory Requirements

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ABSTRACT

Online services of public-service broadcasters in Europe are disputed because they directly compete with online activities of private media. Discussions are similar, but regulatory responses differ. In Switzerland a charter clarifies the conditions for online activities of the public broadcaster (SRG). This paper assesses the SRG's compliance with these requirements. It (1) develops an analytical approach for such assessment, conducts (2) a content analysis to show the structure and functioning of its websites, and (3) a link analysis to capture the intensity of electronic linking and the pattern of interconnection. The paper shows to which extent the SRG complies with regulations and raises questions of regulatory implications, e.g., whether there is need for rules clarification or regulatory intervention.

Key words: online content analysis, link analysis, webcrawling, public-service broadcaster, regulatory assessment

Ⅰ. RESEARCH QUESTIONS AND CONTEXT

Since the mid-1990s public-service broadcasters in Europe have developed online services in addition to their traditional radio and television programs. These activities have from the outset led to controversial discussions regarding their legitimacy and extent as well as their financing and control. In reaction to complaints by private media companies, the European Commission, for example, has used state aid policy to put pressure on the member states and their public-service broadcasters to clarify the extent of online activities (Donders & Pauwels, 2008; Humphreys, 2008; Just & Latzer, 2010). While the discussions within Europe are similar, the regulatory responses by national governments differ. Various European Union states have implemented public-value tests, for example Germany and the UK. Switzerland specified the rules for the provision of online content by the Swiss public broadcaster (SRG) with the *SRG charter*, which entered into force in 2008.[1] The provision of online services is part of its remit and Art. 13 clarifies which content is permissible. The rules require the content to closely relate to specific broadcasts, allow self-promotion solely with the aim of audience bonding and the setting of external links on a non-commercial basis. With a few exceptions there is also a total ban on online advertising and sponsoring.[2]

The paper analyzes the SRG websites according to three research questions:[3]

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1) *Charter for the SRG SSR idée suisse* of November 28, 2007; in force since January 1, 2008.

2) Online adverting is, for instance, permissible on pages that are produced in cooperation with non-profit organizations, e.g. *SF Wissen*, an educational platform. Besides the advertising and sponsoring rules of the SRG charter, those contained in the law and ordinance on radio and television also apply. Federal law on radio and television of 24 March 2006; Radio and television ordinance of 9 March 2007.

3) The Swiss Federal Office of Communication (BAKOM) commissioned this study and specified the research questions and the five enterprise units to be analyzed. The regulator named five domain names to be analyzed that were here extended to fifteen for comparative reasons.

RQ1. Do the individual parts of the online service comply with one of the legal requirements of Art. 13(1) of the charter?

RQ2. What areas are critical in the sense of being a *grey area*? Are there offers that do not relate to the program directly or indirectly (thematic connection)?

RQ3. Do the websites contain links that are not journalistically but commercially motivated?

RQ1 requires an examination of the online content according to Art. 13(1) lit. a-d of the charter. Accordingly, the SRG's online presence is intended to deepen and supplement the traditional program and not to substitute or extend it. The following content is allowed:

a. program-related, multimedia-based content that relates thematically and temporally directly to broadcasts/programs;

b. background and context information that served as basis for broadcasts/programs;

c. basic knowledge information related to educational broadcasts if it serves an improved or more purposeful fulfillment of the remit;

d. audience forums and games connected to broadcasts and with no independent meaning.

The grey area of RQ2 is accordingly defined as all content that does not comply with at least one of the above criteria and further covers all types of advertising, self-promotion and online sales that are not expressly permitted by law.[4]

RQ3 refers to Art. 13(2) of the charter, which prohibits the SRG from electronically linking to other web-pages for money or other benefits of monetary value.

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4) Rules providing for exemption are contained in the Art. 11, 13, 22, and 23 of the Ordinance and Art. 10 and 13 of the SRG charter.

II. METHODS AND CONTEXT

The goal of this study is to examine the SRG's online offers regarding the structure and properties of its websites and the extent to which they comply with regulatory requirements. The study looks into these questions by applying a content analysis and a link analysis, which are complemented by qualitative explorations:

- *The content analysis serves to assess the conformity of the websites with the charter*: this shows the structure and properties of the websites and to which extent and in what areas there is content for which compliance with regulations is unclear (grey area).
- *The link analysis serves to capture the intensity and patterns of electronic linking between the SRG and third-parties*: this shows the type of external websites and the extent to which these are interlinked with the SRG, and assesses–by way of classification of these links–the potential for their commercialization.
- *The qualitative exploration and case studies complement the quantitative analyses*: this helps in understanding the findings and patterns within the grey area and the link structure.

The Internet is a "moving target for communication research" (McMillan, 2000, p. 80), a "unique mixture of the ephemeral and permanent" (Schneider & Foot, 2004, p. 115). These characteristics pose various challenges for scholars doing online research. The extreme depth and breath of online content, the dynamic non-linear structure, the extensive linking of pages and the myriad of new interactive communication means all require attention and the adaptation of traditional research tools, probably even the development of novel approaches suited to individual research. Weare and Lin (2000), for example, claim that the WWW (World Wide Web) opens additional realms for content-analytic research and necessitates the development of new empirical techniques. Content analysis, a prominent tool in traditional communication research, is rarely employed for online research as

compared to other methods such as web surveys, for example.[5] Welker and Wünsch (2010) apply the term "shadow existence" to it.[6] McMillan (2000) and Zhang (2005) both assess content analysis research of the WWW prior to 2000 and from 2000-2004, and identify nineteen and thirty-nine papers respectively from various sources such as the Social Citation Index. The analyses of these papers show variations with regard to research questions and methodological approaches and highlight potential problems for researchers at all stages of content-analysis research: from the formulation of research questions to sampling and data collection, from the definition of units of analysis to the coding and the interpretation of data (also Wang, 2006; Weare & Lin, 2000). A theoretical and methodological review of communication research into the Internet by Kim and Weaver (2002) indicates that–contrary to traditional communication research–articles employing qualitative methods outnumber quantitative ones by five to one. They further conclude that there is a lack of theoretical applications in Internet research, an assessment shared by McMillan (2000) and Zhang (2005), who find that most articles and results are descriptive.

Link analysis is widely neglected in communication science, although Jackson (1997) early on pointed to the strategic nature of the link, which raises important questions for the interpretation and representation of web structures, and suggested using network analysis to study it. Alongside Webometrics, which derives from information science, hyperlink network analysis, which derives from social network analysis, has in fact become a prominent approach to link analysis. In the field of Internet research, link analysis has proliferated in recent years and has been applied, among other disciplines, by computer science, statistical physics and information science (Park & Thelwall, 2003). Despite this surge, Schneider and Foot (2004, p. 116) argue that there is a "paucity of analytical tools for making sense of the links among web pages and between websites." Link analysis has thus far been applied to investigate various types of connections between websites, e.g. the connectivity

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5) The literature on web surveys is manifold. See e.g. the special issue on web surveys in Sociological Methods Research 2009 (Witte, 2009, and other articles in issue).

6) See book announcement of Welker and Wünsch, 2010.

structure between universities (Park & Thelwall, 2003) and hyperlinked environments in politics and media to analyze emerging power-relations on the web (Escher et al., 2006, Hindman, 2009), but never to the question of whether links are established for commercial reasons.

While the Internet allows researchers easy access to huge amounts of previously inaccessible data this also raises questions as to the methods and quality of data collection and the reproducibility of data and approaches applied. In a study on mediated interaction Wouters and Gerbec (2003) conclude that the use of publicly available search engines is unsuitable for creating data sets, e.g. because of the instability of results. Consequently they urge researchers to develop their own software for data collection. However, in recent years various new and fairly inexpensive software products have been developed. For this study a combination of various available products was chosen after testing and the data for content and link analysis directly collected by Web-crawling processes.[7] Thelwall (2002) argues that the increasing use of crawlers and search engines necessitates that researchers clarify their methodological decisions, so as to allow replication of studies. This paper builds upon selections regarding SRG enterprise units, addressing elements/domain-names, the compilation of sample frames and definitions of the basic unit of analysis.

The paper analyzes the websites of five SRG enterprise units from three language regions: *Schweizer Fernsehen* (Swiss Television–SF) and *Radio DRS* (DRS) for the German-speaking area, *Télévision Suisse Romande* (TSR) and *Radio Suisse Romande* (RSR) for the French-speaking area, and *Radiotelevisione svizzera di lingua italiana* (RSI) for the Italian-speaking area.[8] The addressing of the enterprise units is inconsistent and therefore–for comparison–requires a decision regarding what domain-names should be included. SF, for example, uses only the

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7) *Meta Products Offline Explorer* was used for copying and downloading the websites, *Karen's Directory Printer* for generating lists of URLs and data files, *Microsoft Excel* for filtering data to be excluded, and *Spadix Extract Link* for extracting URLs from web documents.

8) The SRG online offer of the fourth Swiss language region (Rhaeto-Romanic) is not covered by this study.

domain sf.tv whereas other enterprise units also use sub-domains. Such sub-domains are included in this study if they refer to online shops or if they appear with the same header and logo (branding) as the investigated website of an enterprise unit. The study surveys a total of fifteen domains and sub-domains, summarized in table 1.

<TABLE 1> Object of investigation: Websites of five SRG enterprise units

Language	German		French		Italian
Medium	TV	Radio	TV	Radio	TV & Radio
Website	sf.tv	drs.ch	tsr.ch	rsr.ch	rsi.ch
Included URLs	sf.tv	drs.ch drs1.ch drs2.ch drs3.ch radiokiosk.ch	tsr.ch tsr.blogs.com tsrboutique.ch moncinema.ch tsremploi.ch tsrdecouverte.ch	rsr.ch couleur3.ch	rsi.ch
Examples of URLs not included	drs4news.ch, drspirando.ch, drsmusikwelle.ch, drsmusigwaelle.ch, virus.ch, radioswissclassic.ch, radioswissjazz.ch, radioswisspop.ch, rtr.ch, mx3.ch, pactemultimedia.ch, publisuisse.ch, rtsr.ch, sortir.ch, srg.ch, srgdeutschschweiz.ch, srg-ssr.ch, srg-ssr-idee-suisse.ch, swissinfo.ch, swisstxt.ch, teletext.ch, vxm.ch, worldradio.ch				

The sample frame for the quantitative content analysis covers all web-pages available at the time of crawling via a maximum of five links starting from the fifteen domains. Accordingly, the research includes six levels with a total of 350,000 web-pages. The totality of theoretically reachable pages was restricted on three dimensions:

- *Data format*: Web-pages may be composed of various data sets. The sample frame contains only URLs (Uniform Resource Locator) of web-pages. URLs that form parts of these pages, such as audio and video files or style sheets, are downloaded and archived but not included individually. As part of the web-page they are, however, part of the analysis.
- *Time frame*: Only pages available during the time of crawling are included.[9]

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9) Because of the time-consuming crawling process the sample could not be generated in one day. The websites of SF were generated from April 22-23, 2009; of DRS from May 15-18,

- *Levels*: The research includes six levels of a website. The crawler starts at the homepage of a website (level one), saves all URLs of pages that are linked with it (level two), visits these pages, and continues with saving all URLs of these pages (level three). This procedure is continued until the crawler has gathered all URLs of the six levels or until no new URL is identified.

The sample of the content analysis is a representative random sample of 2,000 web-pages stratified according to enterprise unit, i.e. 400 web-pages per unit.

The sample frame for the link analysis comprises all links in form of *http://requests* contained in the content analysis' sample frame. This totals approximately 850,000 URLs from about 17,000 different domain-names.[10] The analysis includes: (1) all links in the from of content and technologies that are embedded in the SRG websites by http://requests such as Youtube Player, AdBanners, iFrames, and (2) all sorts of clickable links through which users access other websites. The sample is an intentional selection of the 500 most linked-to domain names, i.e. 100 per enterprise unit.

The 2,000 web-pages were content analyzed on the basis of a codebook[11] comprising *control variables* for technical administration (e.g., enterprise unit, URL, coder information, date), *formal variables* for analyzing the structure of SRG websites, *content-related variables,* and *assessment variables* for controlling the

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2009; of TSR from May 6-7, 2009; of DRS from May 14-15, 2009, and of RSI on May 7, 2009.

10) Twelve URLs of websites that exceed 50'000 links are not included numerically in the sample frame, e.g. w3.org that refers to technical specifications and wemfbox.ch or webtrendslive.com that produce online access statistics.

11) The codebook was developed in a multi-stage process. Preliminary coding for testing and improvement of the codebook were conducted twice, followed by a pilot test of intercoder reliability. Two coders for each of the three language regions coded fifty web-pages. At the beginning the mean intercoder reliability was 0.77 and therefore not sufficient, but by additional training and refinement of coding instructions it was raised to a mean of 0.89. To ensure the quality of the results, all codes were double-checked by the researchers and corrected if necessary. At the end of the coding process the mean intercoder reliability among the researchers was at an excellent level of 0.98.

conformity of web-pages with regulations. Different regulations require separation for assessment: editorial content is appraised by a different variable than games, for example.

The complex structure of a web-page composed of various textual or graphic elements, video and audio content etc. requires a definition of the basic *unit of analysis*, i.e. a specification of what part of the page is inspected for conformity. For this analysis the basic unit is the centrally displayed content that is reached by the URL. All other content is only considered to the extent that it aids in understanding whether the central content complies with regulations or not.

The *link analysis* tackles RQ3 and scrutinizes whether the SRG links to other websites for purely commercial purposes (in exchange for money or benefits of monetary value), which is prohibited by law. A definite assessment of whether the links are purely commercially motivated is difficult, due to a lack of insight into contracts and because linking in the Internet economy assumes various more or less transparent forms of potential benefits. The Internet has special economic characteristics that complicate the assessment of whether the exchange involves benefits of monetary value (Varian et al., 2004). Internet business models allow several often intransparent forms of potential benefit for both referring and referenced sites. For the referenced sites the practice of linking or embedding creates non-monetary value for the third-party through the attention and the eyeballs of users (Davenport & Beck, 2001). Linking leads to PageRank (Page et al., 1998), a measure of website relevance in search results and creates "Google Juice" (Jarvis, 2009), one of the important currencies in the digital economy. In return, websites that link to or embed third-party content may receive a broad set of potential benefits. First, there are direct monetary benefits. Revenues can be generated by brokering new customers to third-party e-shops (affiliate marketing) or by embedding online advertising such as banner ads, sponsoring, classifieds or sponsored links. Second, there are potential benefits where no direct payments are involved. These are typical examples of market transaction in Anderson's (2009) "free economy"–an emerging economic system that allows high-quality products to be obtained without direct payments, made possible through business models

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including cross-subsidies, three-party markets, freemium or non-monetary markets. This study identifies further benefits such as free technology services, for example streaming, hosting or content-management systems, technically integrated, free third-party content (e.g., Youtube-videos), the added journalistic value of linking to third-party offerings, and the reputational effect of image transfer and branding. The business models in the Internet economy lead to difficulties in assessing the compliance with the charter: the charter states that all kinds of commercially motivated links are forbidden. Using a narrow interpretation, this would also include links that create potential benefits where no direct payments are involved. This study, therefore, approaches this question by analyzing the links according to their potential for commercialization. All links contained in the sample frame of the content analysis are first extracted, then the frequency of the domain-names is assessed and the links ranked accordingly. The frequency of connection is labeled as *intensity of linking* and provides information on the most referred-to domains in the sample frame. Subsequently, the sample of 100 most-linked domains per enterprise unit is grouped according to five categories with a varying potential for commercialization: (1) Links to e-shops, (2) Links to ad-serving technology providers, (3) Links to content sites of third parties, (4) Links to technology suppliers with no content, and (5) Links to suppliers of technically integrated content.

Ⅲ. RESULTS

1. Content analysis: Formal structure of websites

The paper distinguishes five formal categories to describe the general structure of SRG websites: editorial contributions, advertisement, interactivity, company information, and overview pages. Table 2 shows the results of the structure and points to significant differences between the SRG enterprise units.

<TABLE 2> Structure of SRG websites according to enterprise units and formal categories (in percent)

Overview pages	26.5	18.3	21.8	13.0	13.3	18.6
Company information	2.8	4.0	1.8	1.0	1.0	2.1
Advertising/Self-promotion	9.0	9.8	18.5	29.3	8.8	15.1
Interactivity	25.0	3.3	19.5	20.8	8.5	15.4
Editorial contributions	36.8	64.8	38.5	36.0	68.5	48.9
Enterprise unit	SF	DRS	TSR	RSR	RSI	Total
N	n=400	n=400	n=400	n=400	n=400	n=2000

The SRG websites are dominated by editorial content. Almost half of the pages (48.9%) contain editorial contributions in the form of written articles/text, audio and video files, pictures and picture galleries.

Interactive content, e.g. user-generated content, editor-generated interactivity (mostly blogs), games, and user platforms amounts to 15.4%, and is followed in almost equal parts by advertising (15.1%), like program and event promotion, sales in online-shops and self-promotion to maintain and strengthen the audience bond. 18.6% are overview pages for navigation and orientation. Finally, company information amounts to 2.1%.

A comparison between the five enterprise units points to noticeable differences. RSI and DRS display a higher share of editorial contributions compared to RSR, TSR and SF, which have more interactive content. Further, there is a large amount of advertising on the RSR website resulting from many pages describing and promoting its radio programs.

2. Content analysis: Content structure of websites

The programming remit of the SRG as detailed in the charter (Article 2(4), a-d) specifies four content categories: information, culture, education and entertainment. Table 3 shows the patterns of content provision across the SRG enterprise units and the differences between them.

<TABLE 3> Structure of SRG websites according to enterprise units and content categories (in percent)

Other content (Advertising/ Self-promotion etc.)	19.3	18.3	30.0	38.5	13.0	23.8
Entertainment/Popular culture	24.8	17.3	12.8	18.0	17.3	18.0
Education	7.0	8.8	7.8	7.5	11.0	8.4
Culture/Arts	3.0	11.0	6.8	8.0	15.0	8.8
Information	46.0	44.8	42.8	28.0	43.8	41.1
Enterprise unit	SF	DRS	TSR	RSR	RSI	Total
n	n=400	n=400	n=400	n=400	n=400	n=2000

The SRG online content is dominated by information. More than 40% of the pages in the sample contain information on a wide range of issues such as politics, the economy/finance, sports, health/social issues, media/Internet/telecommunications, or law/justice/criminal affairs.

Considerably fewer pages are devoted to entertainment (18%), including popular music, fictional entertainment (series, movies), talk shows, cabaret/comedy and reporting on lifestyle, celebrities and gossip.

Little space is dedicated to culture/arts (8.8%) and to educational content (8.4%).

A comparison between the enterprise units points to some differences in content coverage.

The proportion of *information* in the case of RSR (28%) is considerably below the SRG average (41.1%). This may be explainable by the large amount of program promotion on its website. DRS reports politics more often than any other enterprise unit, and SF stands out with a strong sports coverage.

The proportion of *entertainment/popular culture* content is low in the case of TRS (12.8%) and above the SRG average for SF (24.8%), which covers lots of fictional entertainment and celebrities/gossip. RSR dominates in the popular music sub-category.

Culture and Arts are more strongly represented on the websites of RSI (15%) and DRS (11%) than on the other sites. For DRS, findings show many pages related to classical music; RSI reports on literature comparatively often. The proportion of arts and culture on the SF website is significantly low (3%).

Educational content is spread more or less equally across the enterprise units (between 7% and 8.8%), with only RSI (11%) showing a remarkably higher proportion of educational content, with articles on philosophy, theology, history, technology, zoology/nature and geography as well as reporting on country and people with educational purposes.

3. Content analysis: Compliance of SRG websites with regulations

This section shows the extent to which the SRG websites comply with the charter and the proportion and types of pages for which compliance is unclear (grey area). It is important to stress that pages in the grey area may not necessarily violate charter requirements. These web-pages may comply but the analyses are inconclusive due to a lack of researchable indications to the contrary (intransparency), or to legal rules that allow for wide interpretation. The verifiability is partly restricted, for example, because some video or audio material that might indicate a relation to the program is explicitly only available online for a limited time, or because topics of broadcasts are not researchable retrospectively. This raises problems for compliance assessment, especially for older online contributions, and increases the research efforts disproportionately. Moreover, the charter remains vague in various respects, for example regarding how closely connected the background and context information is to be grasped, or also with regard to sales of broadcasts. There are no indications of whether the SRG is allowed to sell broadcasts only in their original form or also in parts (e.g., a single song from a music program), or even a product that is only partly connected to a broadcast (e.g., a whole album although the broadcast aired only one song).

The assessment of the websites with the applicable regulations results in three groups of pages: a) pages for which compliance with regulations can clearly be

verified; b) pages for which compliance with regulations can be *assumed*; and c) pages for which compliance with regulations remains *unclear.* Table 4 provides an overview of the extent of compliance across the SRG websites and for the five enterprise units separately.

<TABLE 4>   Conformity of SRG websites according to enterprise units
             (in percent)

Compliance not assessed (overview pages)	26.5	18.3	21.8	13.0	13.3	18.6
Compliance unclear (grey area)	14.5	3.5	15.3	5.8	7.3	9.3
Compliance assumed	7.5	5.3	5.0	6.0	1.5	5.1
Compliance verified	51.5	73.0	58.0	75.3	78.0	67.2
Enterprise unit	SF	DRS	TSR	RSR	RSI	Total
N	n=400	n=400	n=400	n=400	n=400	n=2000

The SRG websites largely comply with the charter requirements. For more than two thirds of pages the compliance can clearly be *verified* (67.2%). For an additional 5.1% of all pages compliance can be strongly assumed, because the contents deal with major news (political elections or referendums, major sports events, etc.). 18.6% of the online offer covers overview pages for navigation and orientation.[12] In total more than 90% of the online content complies with the charter.

The grey area amounts to 9.3%, i.e. for almost one in ten pages compliance cannot be verified, and there are no indications to assume compliance.

Here again, a comparison shows differences between the enterprise units. The extent of the grey area is above average in the cases of TSR (15.3%) and SF (14.5%), and significantly low for DRS (3.5%).

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12) Compliance is not checked for each item on overview pages separately as each item could be part of the sample. If the page displays "critical" content this is subsequently assessed in the qualitative analysis.

4. Content analysis: Compliance of SRG websites according to formal categories

A major objective is to identify the kind of pages that form the grey area. What formal categories have a higher proportion of potentially problematic content? What kind of content is more prone to violations of regulations? Table 5 displays the grey area according to formal content categories.

<TABLE 5> Conformity of SRG websites according to formal categories (in percent)

Compliance unclear	7.1	40.9	12.4	16.7	1.2
Compliance assumed	7.1	15.8	0	0	0
Compliance verified	85.9	43.3	87.6	83.3	98.8
Formal categories	Editorial contributions	Editor-/User-generated interactivity	Games/Audience forums	Sales/Shop	Self-promotion/ Company information
N	n=978	n=203	n=105	n=102	n=241

The grey area is strongly pronounced in the case of interactive content. For more than 40% of user-generated and editor-generated interactivity (e.g. blogs, readers' comments) compliance with legal requirements remains unclear as there is no direct link between the online and broadcasting content. This indicates that the SRG uses interactivity as an independent content outlet instead of as means to deepen its traditional broadcasting services as stipulated by law.

Compared to interactivity, all other formal categories are less problematic. The extent of the grey area is 16.7% for online-shops, 12.4% for online games and user-platforms and 7.1% for editorial content. Self-promotion and company information show hardly any problems–only 1.2% of pages are inconsistent with regulations.

The comparison between the five websites exhibits several differences and points to specific problem zones (see table 6).

<TABLE 6> Extent of grey area according to enterprise units and formal categories (in percent)

Advertising/Self-promotion & Company information	0.5	1.8	2.0	0.8	0	1.0
Games/Audience forums	2.3	1.0	0	0	0	0.7
Editor-/User-generated interactivity	8.8	0.5	8.5	3.0	0	4.2
Editorial contributions	3.0	0.3	4.8	2.0	7.3	3.5
Enterprise unit	SF	DRS	TSR	RSR	RSI	Total
N	n=400	n=400	n=400	n=400	n=400	n=2000

There is no common pattern in the grey area across the SRG enterprise units, and each website has its particular problem areas, resulting in part from the varying formal structures of the websites.

There are unclear cases of *editorial content* on all SRG websites but to differing extent. These are more comprehensive on the website of RSI (7.3%) than in other units. DRS in particular has only a small amount of editorial content where compliance is unclear (0.3%). A qualitative analysis of unclear pages shows that they are prominently placed in the main categories of the websites (e.g., information rubric, sports rubric). Moreover, a remarkable number of unclear cases originate from online offers related to movies (e.g. movie reviews). The remaining cases are spread over various categories such as columns, advisory services and picture galleries.

Interactivity forms the dominant problem area for SF (8.8%) and TSR (8.5%) and to a lesser extent for RSR (3%). In contrast, the interactive content of DRS (0.5%) and RSI (0%) do not pose significant problems. A qualitative review indicates that various *editor's blogs* of SF, TSR and RSR cause problems with regard to compliance. Editors often use their personal blogs to provide background information about their professional working practice and to report on private events and personal impressions, which are not always related to the traditional

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broadcasting content. Moreover, selected *user-platforms*[13] for music and video uploads on TSR and SF are identified as major problem sources as they hardly relate to broadcast programs. Finally, the interactive services also comprise *online games, quizzes* and *polls* for entertainment as well as *online forums* for user debates, which mostly relate to broadcasts.

Finally, but to a lower overall extent, *advertising* is a problematic area across all SRG websites apart from RSI. The grey area is predominately concentrated on the websites of TSR (1.8%) and DRS (2%), where the analysis locates three quarters of all inconclusive advertising content (mostly products for sale in the online-shops). The online stores offer DVDs, books, games and music CDs. The sale of such articles is allowed under certain conditions (e.g. merchandising products for audience bonding, broadcast of programs) and most products comply. Apart from the online-shops there are only a few individual cases of problematic forms of advertising, e.g. event-calendars with interlinked ticket-sales functions (DRS, RSR).

5. Link analysis

The link analysis is to assess RQ3, namely whether the websites contain links that are not journalistically but commercially motivated, which is prohibited by law. For this the 500 most referred-to external web-domains (100 per enterprise unit) are categorized according to their functionality, the intensity of linking and their potential for commercialization. For the latter the external URLs are classified into five functionally different categories. The first two categories (e.g. links to e-shops and to ad-serving technology providers) have a high potential for commercialization in the Internet economy.

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13) *TSR*: moncinema; *SF:* Musicnight myStage

1) Links to e-shops

There are twenty-four domains of different e-shops in the sample frame.[14] Three of them contain affiliate IDs, which indicate an affiliate marketing relationship between two websites–an Internet business practice where a retailer rewards website owners for every customer they bring who is identified through the affiliate ID. They are found in the links between SF and Exlibris.ch (popular Swiss e-shop for music, DVDs etc.), RSR and iTunes Music Store, as well as RSR and Cede.ch (popular Swiss music e-shop). Exlibris.ch also receives a substantial number of links from DRS, however, by a form of technological integration that should be distinguished from the affiliate programs. DRS does not direct its users to the Exlibris.ch website, but has Exlibris.ch run the shop under a DRS-owned domain (radiokiosk.ch). The immense intensity of electronic linking derives from album-cover images and soundbites integrated via http://request from Exlibris.ch's website. A range of other e-shops selling event tickets, books, DVDs and other merchandise are also found in the sample frame.

2) Links to ad-serving technology providers

The SRG charter prohibits most advertising. The sample frame does not contain any links with ad-serving technology providers apart from pages of *SF-Wissen*, where online advertising is allowed.[15] *SF-Wissen* contains a number of links to Adition.com, a service provider that hosts and places online advertising.

The remaining domains that are neither e-shops nor ad-service providers are classified into three functionally different categories: links to content sites of third parties, to technology suppliers with no content, and to suppliers of technically integrated content. Compared to links to e-shops and to ad providers, these three categories have a less explicit potential for commercialization. For this reason other indicators allowing conclusions regarding commercialization are presented.

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14) The analysis was in part extended to the whole sample frame.
15) See footnote 2.

3) Links to content sites of third parties

This category consists of sites users are taken to when clicking a link. The evaluation of the potential for commercialization is difficult here, because there are no explicit indicators other than the intensity of linking. Therefore qualitative case analyses are conducted to identify formalized partnerships. The most-linked-to domains generally include official partners, broadcasting partners and co-producing partners. Furthermore, there is a substantial intensity of linking from SRG websites to activities not covered by the charter. These activities have to be notified in advance if they impair the position and activities of other Swiss media companies.

4) Links to technology suppliers with no content

Links not only take users away to third-party content sites, they also embed third-party technologies in the SRG's websites. Technology service-providers are among the domains with the highest intensity of linking in the sample frame. These links exhibit a varying potential for commercialization. They refer to branded technology, such as plug-ins and media players (Adobe Flash Player, Real Player), external distribution channels for SRG's own content (Twitter.com, Youtube.com, Photobucket.com, Facebook.com), content-management systems (Wordpress.org, Drupal.org, Plone.org, Blogspot.com) and design templates that link to designers' web-pages. Branded technology extends the functionality of a website and is usually free of charge for website owners. The trade-off is the placement of the supplier's brand, logo, and links. This slightly raises the potential for commercialization as compared to white-label (non-branded) technologies, which are also contained in the sample.

5) Links to suppliers of technically integrated content

This category contains links to suppliers who provide content and dedicated distribution technology to embed in the SRG's websites. The domains can be classified into *customized* and *standardized* solutions. SF uses customized solutions where picture galleries from Tillate.com (nightlife portal), stock-exchange data from Swissquote.ch (online trading service), and personality tests from Alpha-

Test.de are embedded using SF's look and feel. Furthermore, all SRG enterprise units make extensive use of standardized embeddable content such as videos (via Youtube.com, Brightcove.com), maps (Google Maps) or pictures (Flickr.com).

To sum up, a definite assessment of whether links are purely commercially motivated is difficult without insights into contracts and because the Internet has special economic characteristics that complicate the assessment of whether the exchange involves benefits of monetary value. The assessment of links in this study therefore focuses on the structure and intensity of linking and the potential for commercialization of links with indicators such as affiliate IDs, customized technical solutions, formalized partnerships and ad serving technologies. One of the characteristics of the Internet economy is the need for links and integration of third-party services. Third parties often offer their services as branded technology or branded content (i.e. plug-ins, media players, distribution channels, content-management systems, design templates or embeddable content). The use of such services is usually free of charge for website owners but the suppliers demand that their logo, brand or link appears on the website. When assessing the potential for commercialization of such links one has to take into account that without such non-monetary countertrade–that, however, often involves benefits of monetary value that in a strict sense are prohibited by the charter–a state-of-the-art webpage would often not be possible.

Ⅳ. CONCLUSIONS

The central question of this paper is whether the SRG websites comply with the provisions of the SRG charter, whether the websites supplement and deepen the traditional program. This question was specified accordingly: (1) do the websites directly relate to broadcasts; (2) is there a grey area with uncertainties regarding compliance; and (3) are there links that are solely commercially motivated, i.e. does the SRG receive money or benefits of monetary value for linking?

A preceding question here is whether such an assessment is accomplishable by external expertise, as there are no approved approaches for assessing compliance with regulatory requirements of websites of public-service broadcasters. The two-tiered approach developed here is a novel way of assessing the SRG's websites and linking practice using a combination of content and link analyses, the data for which were directly collected by Web-crawling processes. This study is the first to systematically assess compliance of a European PSB's online offer with regulations on a large scale. The developed analytical approach–coupled with computer-assisted Web-crawling–contributes to methodologically furthering online research in the fields of data collection, online content and link analyses. It further provides innovative and instructive findings on questions of ex post controllability and regulatory implications. With the enactment of law regulatory challenges do not end and the question of how to control compliance with regulations moves center stage together with the role and strategies of regulators (Latzer et al. 2010a; 2010b). This question will become increasingly relevant with regard to online activities of PSB's, in particular for European Union member states where the recently revised European Broadcasting Communication[16] requires from now on a prior evaluation of new online services with consideration of public value and market impact at the national level (Latzer & Just, 2010).

The results of this study show that the SRG largely complies with regulations but also that compliance remains unclear for one in ten web-pages and that linking generates non-monetary value. Although no common pattern of grey area across the SRG enterprise units is discernible, internet-typical activities (e.g. interactive content, links to technology suppliers) appear problematic.

The content analysis allows a fine identification of the formal and content structures of the websites, assessment of the compliance of the pages with regulations and captures a grey area where compliance remains unclear. The limits to final verification result from legal rules that allow for wide interpretation (e.g., is

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16) The Broadcasting Communication clarifies the application of state aid rules to public broadcasting. The revision of this Communication entered into force in October 2009.

the SRG allowed to re-bundle broadcasts in any way it likes and thus sell broadcast in different versions then originally aired?) and from varying intransparencies on the web-pages (e.g., regarding the extent to which the content relates to specific broadcasts and programs).

The link analysis makes it possible to assess the functionality, the structure and intensity of linking and the potential for commercialization of links. The limits are mostly in the assessment of non-monetary exchange, essentially to determine whether this exchange amounts to benefits of monetary value as stated by the charter. Here one has to consider the need for linking and integration of third-party services in the Internet economy and that a state-of-the-art website is often impracticable without such countertrade.

Finally, the results raise questions of regulatory implications, e.g. whether there is the need for rules clarification or regulatory intervention given the extent of grey area. Clarifications may be appropriate regarding the questions of whether non-monetary benefits resulting from linking amount to benefits of monetary value, or whether user platforms and editorial blogs that hardly relate to programs are permissible. As for regulatory reactions, various strategies remain: from a passive approach of awaiting complaints and then reacting case by case, to soft pressures to increase awareness and maybe stimulate self-regulation on the part of the SRG, to active implementation of additional regulations like transparency rules that disclose relation to broadcasts.

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